

Application No.: 09/335,608
Attorney's Docket No.: PHB 34-257

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CLAIM AMENDMENTS

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This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (currently amended) A telecommunications system suitable for transmitting real-time data and non-real-time packet data, comprising

a first and a second communication station, and

a dual mode channel for communication of both the real-time and the non-real-time data from the first to the second station,

wherein

the first station comprises a first transceiver which is operable to transmit both the real-time and the non-real-time data,

the second station comprises a second transceiver which is operable to receive the real-time and/or the non-real-time data, and

the first station further comprises a controller for generating an output data stream comprising the real-time data, the controller also allocating non-real-time packet data to the output data stream when the data rate of the real-time data is less than the full data capacity of the dual mode channel, which output data stream is transmitted by the transceiver over the channel,

wherein ~~for at least part of the output stream the real-time and non-real-time packet data each have a respective non-zero minimum bit rate and a combined bit rate less than a maximum value~~ comprises both real-time data and non-real-time packet data, and

wherein the part of the output stream is a single time slot.

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2. (previously presented) A system as claimed in claim 1, wherein the real-time data comprises speech data.
3. (canceled)
4. (previously presented) A system as claimed in claim 1, wherein the first transceiver comprises a buffer for storing the non-real-time packet data for transmission during reductions in the data rate of the real-time data.
5. (previously presented) A system as claimed in claim 1, where the first station comprises a base station, and the second station comprises a mobile station of a cellular telecommunications network.
6. (previously presented) a telecommunications station for use in a system as claimed in claim 1.
7. (currently amended) A method of operating a telecommunications system suitable for transmitting real-time data and non-real-time packet data, the system comprising a first and a second communication station and having a dual mode channel for communication of both the real-time and non-real-time data from the first to the second station, the first station comprising a first transceiver which is operable to transmit both the real-time and the non-real-time data, the second station comprising a second transceiver which is operable to receive the real-time and/or non-real-time data, wherein the method comprises:

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controlling the allocation by the first transceiver of the non-real-time packet data to an output data stream comprising the real-time data when the data rate of the real-time data stream is less than the full data capacity of the dual mode channel, and

controlling the first transceiver to transmit the output data stream over the channel,

wherein, ~~for at least part of the output stream the real time and non real time packet data each have a respective non-zero minimum bit rate and a combined bit rate less than a maximum value~~ comprises both real time data and non-real-time packet data, and

wherein the part of the output stream is a single time slot.

8. (cancelled)

9. (previously presented) A method as claimed in claim 7 wherein the first station comprises a buffer, characterized by storing the non-real-time packet data in the buffer for transmission during reductions in the data rate at the real-time data.

10. (cancelled)

11. (cancelled)

12. (currently amended) A method of transmitting data comprising:

- allocating at least first, second, and third types of data to a single output data stream, at least the first type of data being real-time data, and at least the third type of data being non-real time packet data, the third type of data being added when the data rate of the

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first and/or second type of data is less than an expected capacity of a transmission channel; and

- transmitting the single output data stream on a single, multiple-mode channel;
- wherein at least part of the single output data stream comprises all three types of data,
and
- wherein the part of the output data stream is a single time slot.

13. (previously presented) The method of claim 12 wherein the first type of data is video and the second type of data is voice.

14. (currently amended) A CDMA transmission method comprising:

- combining data of at least two types into a single output data stream, the at least two types comprising variable rate real-time data and non-real-time data, the non-real-time data being added to the output data stream only when an expected capacity of a transmission channel is greater than the data rate of the real-time data;
- encoding the combined data using a single spreading code, so that the combined data occupies a single transmission channel; and
- transmitting the encoded data on ~~a~~ the single transmission channel
- ~~wherein for~~ at least part of the output stream, ~~the real time and non real-time packet data each have a respective non-zero minimum bit rate and a combined bit rate less than a maximum value; and~~ comprises both real time data and non-real-time packet data, and

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- wherein the part of the output stream ~~is a single time slot~~ constitutes a frame defining a single transmission.

15. (currently amended) A receiving method comprising:

- receiving a combined data stream comprising both real-time data and non-real-time packet data in a single time slot from a transmission channel;
- demodulating the data stream;
- reading ~~the one~~ frame header to determine which ~~frames~~ part of the time slot contain contains packet data and which ~~frames~~ part of the time slot ~~contain~~ contains speech data;
- reconstituting the speech data and the packet data;
- providing the speech data to a speech decoder; and
- providing a speech output signal and a packet data output signal at distinct output devices;
- ~~wherein the header indicates both the packet data and the speech data being in a single dual mode channel.~~

16. (currently amended) A TDMA transmission method comprising:

- accumulating non-real-time packet data;
- allocating real-time data to an output data stream;
- determining when the real-time data does not require the full capacity of a transmission channel;
- allocating the non-real-time packet data to the output stream, when the real-time data does not require the full capacity; and
- allocating output data stream to a channel that occupies more than one time slot in a transmission time frame,
- wherein at least one single time slot comprises both real-time data and non-real-time packet data.

17. (currently amended) A TDMA transmission method comprising:

- ~~accumulating~~-allocating non-real-time packet data;
- allocating real-time data and the non-real-time packet data in variable proportions to multiple time-segments slots within a transmission time frame when the real-time data does not require the full capacity of a transmission channel; wherein at least one single time slot of the transmission time frame comprises both real-time data and non-real-time packet data; and
- transmitting the transmission time frame.

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18-22. (cancelled)

23. (previously presented) A system as claimed in claim 2, wherein the first station comprises a speech coding system which prepares the speech data for transmission from a speech input, and wherein the controller receives timing information from the speech coding system indicating the timing of interruptions in the speech data stream.

24. (previously presented) A method as claimed in claim 7 wherein the real-time data comprises speech data and the first station comprises a speech coding system which prepares the speech data for transmission from a speech input, characterized by determining from the speech coding system the timing of interruptions in the speech data stream.

25. (cancelled)

26. (cancelled)

27. (currently amended) A receiving method comprising:

- receiving ~~a combined~~ data stream comprising both real-time data and non-real-time packet data from a single time slot from a transmission channel;

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- demodulating the data stream;
- reading at least one frame header to ~~determine which time slots contain real-time data and which time slots contain non-real-time data, at least one time slot containing both real-time and non-real-time data~~ which part of the time slot contains real-time data and which part of the time slot contains non-real-time data;
- reconstituting the ~~real~~ real-time data and the non-real-time data; and
- providing the ~~real~~ real-time data and the non-real-time data to distinct output devices.

28. (Currently Amended) An output data stream including both real-time and non-real-time data in a single time slot of a single dual mode channel, wherein a respective frame header in the output data stream indicates that both real-time and non-real-time data reside in the single time slot and ~~which part of each individual time segment~~ the time slot has been allocated to the speech data and which part has been allocated to the packet data.

29. (Cancelled)

30. (Currently Amended) A data stream including both real-time and non-real-time data in a single time slot of a single dual mode channel, wherein a respective frame header in the output data stream indicates that both real-time and non-real-time data reside in the single time slot and

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which part of ~~each individual time segment~~ the time slot has been allocated to the speech data
and which part has been allocated to the packet data.

31-36 (Cancelled)